

Please delete the paragraph beginning on page 4, line 12 and ending on page 4, line 14, and insert in its place:

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A fourth aspect of this invention is that the host system stores a record of the authentication information received from said signal conditioning circuitry in the memory.

In the Claims

Please amend claims 1, 4-6, 10-12, 15, 16, 21-23, 26-28, 32-34, 37, 38 and 42 as follows:

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1. (Amended) A system for preventing tampering with signal conditioning circuitry in electronics that determines a parameter from signals received from sensors, said system comprising:

a host system that receives data from and sends data to said signal conditioning circuitry;

a processing unit in said host system;

a memory connected to said processing unit;

instructions for directing said processing unit in said host system to periodically transmit a request for authentication information from said signal conditioning circuitry, receive said authentication information from said signal conditioning circuitry in response to said request, comparing said authentication information with initial information, and signal an error in response to said authentication information not being equal to said initial information; and

a media readable by said processing unit for storing said instructions.

4. (Amended) The system of claim 1 wherein said instructions for directing said processing unit in said host system includes:

instructions for directing said processing unit in said host system to store a record of said authentication information received from said signal conditioning circuitry in said memory

5. (Amended) The system of claim 1 wherein said instructions for directing said processing unit in said host system includes:
instructions for directing said processing unit in said host system to terminate operation of said system.

6. (Amended) The system of claim 1 wherein said instructions include:
instructions for directing said processing unit to obtain said initial information.

10. (Amended) The system of claim 4 wherein said record includes a time stamp indicating when said authentication information is received.

11. (Amended) The system of claim 4 wherein said record includes said authentication information received from said signal conditioning circuitry.

12. (Amended) Meter electronics for a Coriolis flowmeter that detects possible tampering comprising:

a host system that receives parameter signals indicating properties of a material flowing through said Coriolis flowmeter from said signal conditioner and supplies power to signal conditioner;

a signal conditioner remote from said host system and communicatively connected to said host system wherein said signal conditioner receives pick-off signals from sensors affixed to said Coriolis flowmeter and generates said parameter signals from said pick-off signals;

a processing unit in said host system;

a memory connected to said processing unit in said host system;

instructions for directing said processing unit in said host system to:

periodically transmit a request for authentication information to said signal conditioner,

receive said authentication information from said signal conditioner in response to said request,

compare said authentication information with initial information, and signal an error in response to said authentication information not being equal to said initial information; and

a media readable by said processing unit for storing said instructions.

- ~~Claim 15~~
15. (Amended) The meter electronics of claim 12 wherein said instructions for directing said processing unit in said host system includes:
instructions for storing a record of said authentication information in said memory.
16. (Amended) The meter electronics if claim 12 wherein said instructions for directing said processing unit in said host system includes;
instructions for directing said processing unit in said host system to terminate operation of said system.
- ~~Claim 21~~
21. (Amended) The meter electronics of claim 15 wherein said record includes a time stamp indicating when said authentication information is received.
22. (Amended) The meter electronics of claim 15 wherein said record includes said authentication information received from said signal conditioner.
23. (Amended) A Coriolis flowmeter having tamper resistant meter electronics comprising:
at least one flow tube through which material flows;
a driver affixed to said at least one flow tube that vibrates said at least one flow tube as said material flows through said at least one flow tube;
sensors affixed to at least two different points of said at least one flow tube to generate sensor signals indicating vibrations of said at least one flow tube at said at least two different points;
a signal conditioner that transmits a drive signal to said driver, receives said sensors signals, and generates parameter signals from said sensors signals wherein said parameter signals indicate a property of said material;
a host system that provides power to said signal conditioner and receives said parameter signals from said signal conditioner;
a processing unit in said host system;
a memory connected to said processing unit in said host system;
instructions for directing said processing unit in said host system to:

periodically transmit a request for authentication information to said signal conditioner,
receive said authentication information from said signal conditioner in response to said request,
compare said authentication information with initial information, and signal an error in response to said authentication information not being equal to said initial information; and a media readable by said processing unit for storing said instructions.

26. (Amended) The Coriolis flowmeter of claim 23 wherein said instruction for directing said processing unit in said host system includes: instructions for storing a record of said authentication information in said memory.
27. (Amended) The Coriolis flowmeter of claim 23 wherein said instructions for directing said processing unit in said host system includes: instructions for directing said processing unit in said host system to terminate operation of said Coriolis flowmeter in response to said signal.

28. (Amended) The Coriolis flowmeter of claim 27 wherein said instructions for directing said host system include: instructions for directing said processing unit to obtain said initial information.

32. (Amended) The Coriolis flowmeter of claim 26 wherein said record includes a time stamp indicating when said authentication information is received.
33. (Amended) The Coriolis flowmeter of claim 26 wherein said record includes said authentication information received from said signal conditioner.

34. (Amended) A method for preventing tampering with signal conditioning circuitry in a system comprising the steps of: periodically transmitting a request for authentication information from a host system to said signal conditioner;